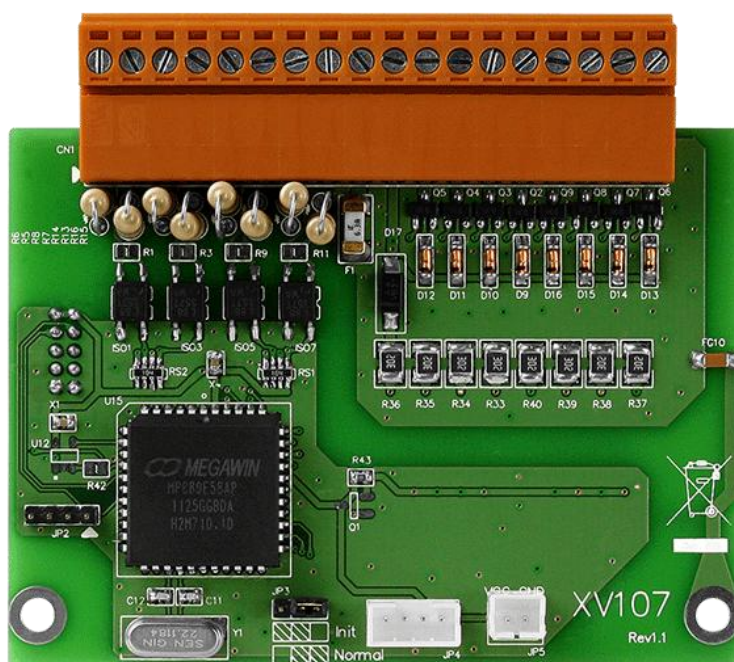




RFU-IO-433

XV Expansion Board Support

Dec. 2024, Version 1.00



Warranty

All products manufactured by ICP DAS are warranted against defective materials for a period of one year from the date of delivery to the original purchaser.

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1. Introduction

RFU-IO-433 is a 433 MHz wireless I/O host using Modbus protocol, it does not have any I/O and users need to purchase and install XV I/O expansion boards. The following diagram shows how the XV board is installed:



Following table is the I/O expansion boards supported by RFU-IO-433:

DIO Expansion	Multi-Function Expansion
XV107 / XV107A	XV303
XV110	XV305 **
XV111 / XV111A	XV306
XV161-SL	XV307
Relay Output Expansion	XV308 *
XV116	XV310
XV119	XV315 **
Encoder/Frequency/Counter Input	PWM Output Expansion
XV484 *	XV488 *

Note: * The **Pair-connection** mode is not supported.

** AI channels not support pair-connection.

For more info on XV boards, see the pdf [xv-board_assembly_quick_start.pdf](#).

2. RFU-IO-433 Modbus Address

For the Modbus address of the XV I/O expansion board, please refer to the user manual of each expansion board. The following only lists the Modbus address of the RFU-IO-433.

Parameter	Address	Len	Data	Type	Description
Firmware Version	0xA000	Word	0x0307	R	Firmware version v307
RSSI Data	0xA001	Word	0x00~0xFF	R	Refer to Appendix A
DO Channel	0xA002	Word	0 ~ 16	R/W	DO Channel Number
DO Address	0xA003	Word	0x00~0xFF	R/W	DO Start Address
DI Channel	0xA004	Word	0 ~ 16	R/W	DI Channel Number
DI Address	0xA005	Word	0x00~0xFF	R/W	DI Start Address
AO Channel	0xA006	Word	0 ~ 16	R/W	AO Channel Number
AO Address	0xA007	Word	0x00~0xFF	R/W	AO Start Address
AI Channel	0xA008	Word	0 ~ 16	R/W	AI Channel Number
AI Address	0xA009	Word	0x00~0xFF	R/W	AI Start Address

3. Unsupported I/O expansion board

In general, the RFU-IO-433 will display information such as the current I/O expansion board's channel count and starting address at Modbus addresses 0xA002 to 0xA009. However, if the I/O expansion board model is newer than the RFU-IO-433's supported versions, the RFU-IO-433 may not recognize the I/O expansion board. In this case, the values read from Modbus addresses 0xA002 to 0xA009 will all be zero. Nevertheless, under normal mode, users can still perform I/O operations on the expansion board by reading and writing through Modbus commands. Just the 16-point DI/DO LED will have no effect.

Since the RFU-IO-433 does not recognize the I/O expansion board, the Pair-connection Mode is unavailable. If users need to use the Pair-connection Mode, they can modify the values at Modbus addresses 0xA002 to 0xA009 through Modbus commands to set the desired number of I/O points and Modbus addresses. After configuration, re-power the RFU-IO-433, and the Pair-connection Mode will be ready for use.

Note: When the RFU-IO-433 supports the I/O expansion board, modifying addresses 0xA002 to 0xA009 has no effect.

4. I/O LED arrangement of XV expansion board

The 16-point I/O LED of RFU-IO-433 will have different arrangements according to different XV expansion boards. Currently, the 16-point I/O LED only provide DI / DO display and do not support AI / AO display.

